Remarks/Arguments

These remarks are in response to the Office Action dated June 9, 2005. This reply is timely filed. At the time of the Office Action, claims 1-17 were pending in the application. Claims 3-5, 7, 11, 13-15 and 17 were objected to as being dependent upon a rejected base claim, but were indicated as allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims1, 2, 6, 8-10, 12 and 16 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,708,679 to Fernandes et al. ("Fernandes et al."). The rejections are set out in more detail below.

In this Amendment, Claim 9 has been amended. Claim 5 has been canceled and claims 18-21 have been added.

I. Allowable Subject Matter

The Examiner has objected to claims 3-5, 7, 11, 13-15 and 17. However, Applicants note with appreciation that the Examiner has indicated these claims would be allowable if rewritten in independent form, including all of the limitations of the base claim and any intervening claims. In response, claim 5 has been re-written in independent form as new claim 18. The language of original dependent claims 2, 4, and 6 are respectively incorporated into new claims 19, 20, and 21. Applicants believe that new claims 18-21 are in condition for allowance.

II. Brief Review of Applicants' Invention

Prior to addressing the Examiner's rejections on the art, a brief review of Applicants' invention is appropriate. The invention concerns a method for dynamically optimizing radome performance. The method can include the steps of sensing at least one parameter defining a performance characteristic of the radome. For example, the parameter can be an incident RF signal, a reflected RF signal, and/or a transmitted RF signal. The parameter can also be a reflection coefficient, a transmission coefficient, a radome temperature, a polarization of incident waves, and/or an angle of wave incidence. After the parameter is sensed, at least one electrical characteristic of the radome can be selectively varied to dynamically modify the performance characteristic.

The invention also concerns a radome. The radome includes a sensor for sensing at least one parameter defining a performance characteristic of the radome. For example, the sensor can sense radio frequency energy. The parameter can be reflected radio frequency energy, transmitted radio frequency energy, a radome temperature, a polarization of incident waves, and/or an angle of wave incidence. A control system is also included within the invention for selectively varying at least one electrical characteristic of the radome to dynamically modify the performance characteristic.

III. Claim Rejections Under 35 U.S.C. §102(b)

Claims 1, 2, 6, 8-10, 12 and 16 have been rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,708,679 to Fernandes, et al. ("Fernandes et al.").

Fernandes et al. discloses an antenna for satellite communications. The antenna includes a ground plane and a substrate on which is formed a flat antenna array. The antenna's structural support is provided by a frame and a radome, which encase the antenna. The radome is transparent to RF signals and includes a journal bearing. The radome also houses lenses that are independently rotatable on coaxial shafts that are seated in the journal bearing. The antenna in Fernandes et al. can be operatively associated with a sensor. The sensor is provided for measuring one or more parameters associated with a power transmission line. The sensor can use the antenna for communicating a sensed parameter.

Significantly, Fernandes et al. does not disclose several important features that are presently recited in Applicant's independent claims 1 and 9. For example, claims 1 and 9 respectively include claim limitations directed to a sensing step or a sensor that senses a performance parameter that defines a performance characteristic of a radome. Fernandes et al. does not disclose a sensing step or a sensor that senses a performance parameter that defines a performance characteristic of the radome. Instead, the sensor described in Fernandes et al. senses an electrical parameter of a power transmission line. See col. 2, lines 50-55 and col. 11, lines 47-54. The sensing operation in Fernandes et al. has no relationship at all to the operation of the radome.

Claims 1 and 9 also recite that at least one electrical characteristic of the radome is selectively varied or is variable so as to dynamically modify the radome performance characteristic. Fernandes et al. does not disclose a control system that selectively varies an electrical characteristic of the radome. The antenna system in Fernandes et al. is shown in Fig. 2. As described in col. 7, lines 5-10, the antenna system in

Fernandes et al. does include a radome 211, which encases the antenna. However, Fernandes et al. does not disclose that an electrical characteristic of the radome 211 can be varied.

Moreover, claim 1 recites that the electrical characteristic of the radome is varied in response to the sensing step. Fernandes et al. does not disclose a control system selectively varying an electrical characteristic of the radome in response to the sensing step as recited in claim 1. In order to more clearly make this distinction in Claim 9, that claim has now been amended to expressly recite that the control system selectively varies at least one electrical characteristic of the radome in response to the sensor.

The Examiner has asserted that Fernandes et al. discloses a control system (216, 217, 218 in Fig. 2) to selectively vary the electrical characteristics of a radome. In fact, 216, 217 and 218 are connectors that interface with the antenna and do not serve to selectively vary the electrical characteristics of a radome. Furthermore, Fernandes et al. does not disclose, suggest or motivate someone of ordinary skill to selectively vary the electrical characteristics of a radome.

In view of the foregoing, claims 1 and 9 are believed to be allowable. The remaining dependent claims are believed to be allowable at least by virtue of their respective dependence upon claims 1 and 9.

IV. Conclusion

Applicants have made every effort to present claims which distinguish over the prior art, and it is believed that all claims are in condition for allowance. Nevertheless, Applicants invite the Examiner to call the undersigned if it is believed that a telephonic interview would expedite the prosecution of the application to an allowance. In view of the foregoing remarks, Applicants respectfully request reconsideration and prompt allowance of the pending claims.

Respectfully submitted,

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